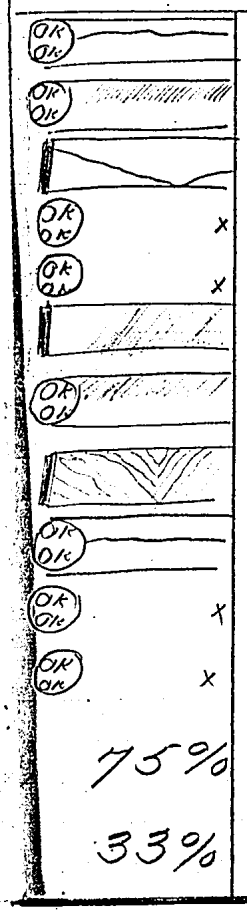
Notebook Series -- Notebooks by Edison and Other Experimenters
Disc Record Book No. 19
Notebook, N-16-09-07

This notebook was used by Edison during September-December 1916 for notes on experiments to improve the manufacture of disc records. There are also notes by William W. Dinwiddie, Archie D. Hoffman, and other experimenters. The entries describe a sequence of experiments numbered from 1308E through 1388E. Included are tests of experimental lots of record blanks constructed by different methods or prepared with different ingredients. Some tests involve variations in the varnish preparations used to coat the record blanks or in their method of application. Flaws and successful results are both noted. One notation indicates that the results of experiment 1381E were reinspected in January 1917. At the end of the book are tallies of record blanks produced. Some notes are the form of instructions to Hoffman or Dinwiddie. The front and back covers are labeled "19." The pages are unnumbered. Approximately 150 pages have been used.

9/7/16

1308-E
Powder blanks press experiment –
cold press 600 lbs –
Steam on 7 min.
Cool 10 min.



C.J

11309-E 9/7/16

OK OK	x		
OK OK			
OK OK	x		
OK OK	VEN P.O		
OK OK	VEN		
OK OK			
OK OK	x		
OK OK	x		
OK OK	x		
OK OK			
OK OK	VEN PO		
OK OK	x		
	100%		
	50%		

1309E
Powder blank press experiment
Cold press 600 lbs.
Steam on 8 min.
Cool 10 min.

1310 E 9/7/16

OK OK VEN

OK OK

OK OK ×

OK OK ×

OK OK ×

OK OK VEN P.O.

OK OK VEN + CN.

OK OK

OK OK

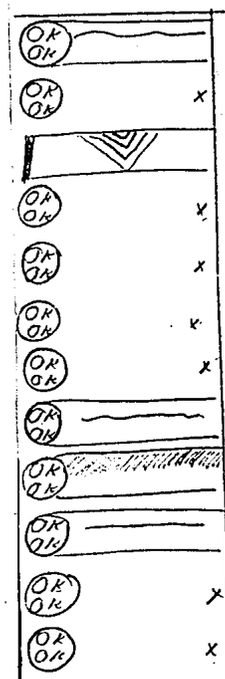
OK OK

83%

85%

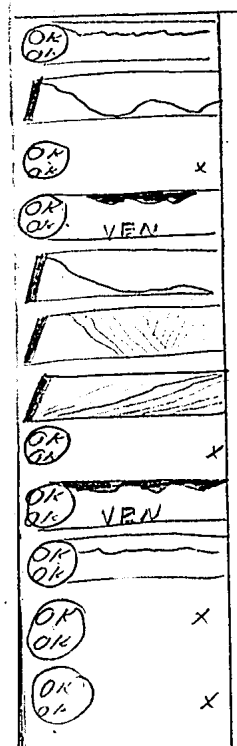
1310 E
Powder blank press experiment.
Cold press 600 lbs
Steam on 9 min
Cool 10 min

1311-E 9/7/1



1311 E
Powder blank press Experiment
Cold press 600 lb
steam on 10 min
Cool 10 min.

1312-E 9/7/16



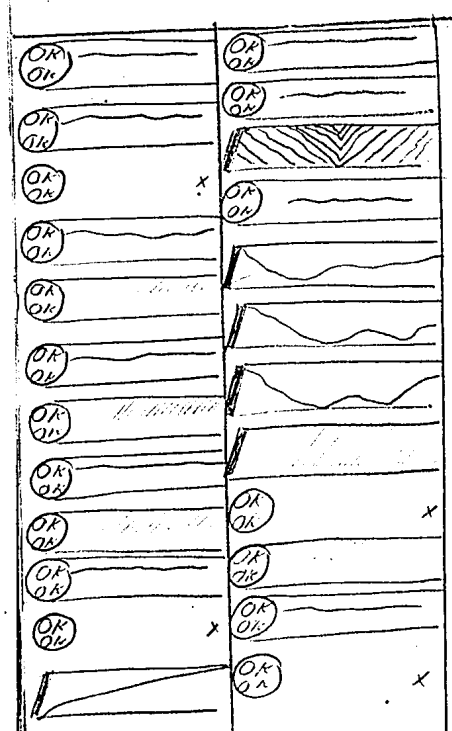
66%

33%

1312-E
Powder blanks press Experiment.
5 min contact with steam
5 min high pressure
10 min. Cool.

If blanks appear to need
it use two brushes of varnish
This applies to 1308-E to 1312-E inc.

1313-E 9/7/16



91%	58%
16%	16%

1313 E.

two rounds of regular blanks varnished with two brushes of varnish.

Regular in all other respects –

8 15 –	4.8%	water – Neo alcohol	1314 E	
8 20	6	OK OK	OK OK	
8.25	7.4	OK OK	OK OK	OK OK
8 30	8.9	OK OK	OK OK	
8 35	10.4			
8 40	11.9		OK OK	OK OK
8 45	13.5			
8 50	15.2	OK OK	OK OK	
8 55	16.9	OK OK	OK OK x	
8 60	18.7			OK OK
8 65	20.4	OK OK x	OK OK x	
8 70	22.3	OK OK	OK OK	OK OK
8 75	24.2		OK OK	OK OK
8 80	26.1		OK OK	OK OK
8 85	28			
8 90	30		OK OK	OK OK
8 95	32.1	OK OK	OK OK	
9 00	34.2	OK OK		
OK OK				
OK OK	x			
OK OK				
Ok. Bll.		75%	100%	58%
OK OK		8%	16%	00%
OK OK	x			
6				

1314 E

Hoffman

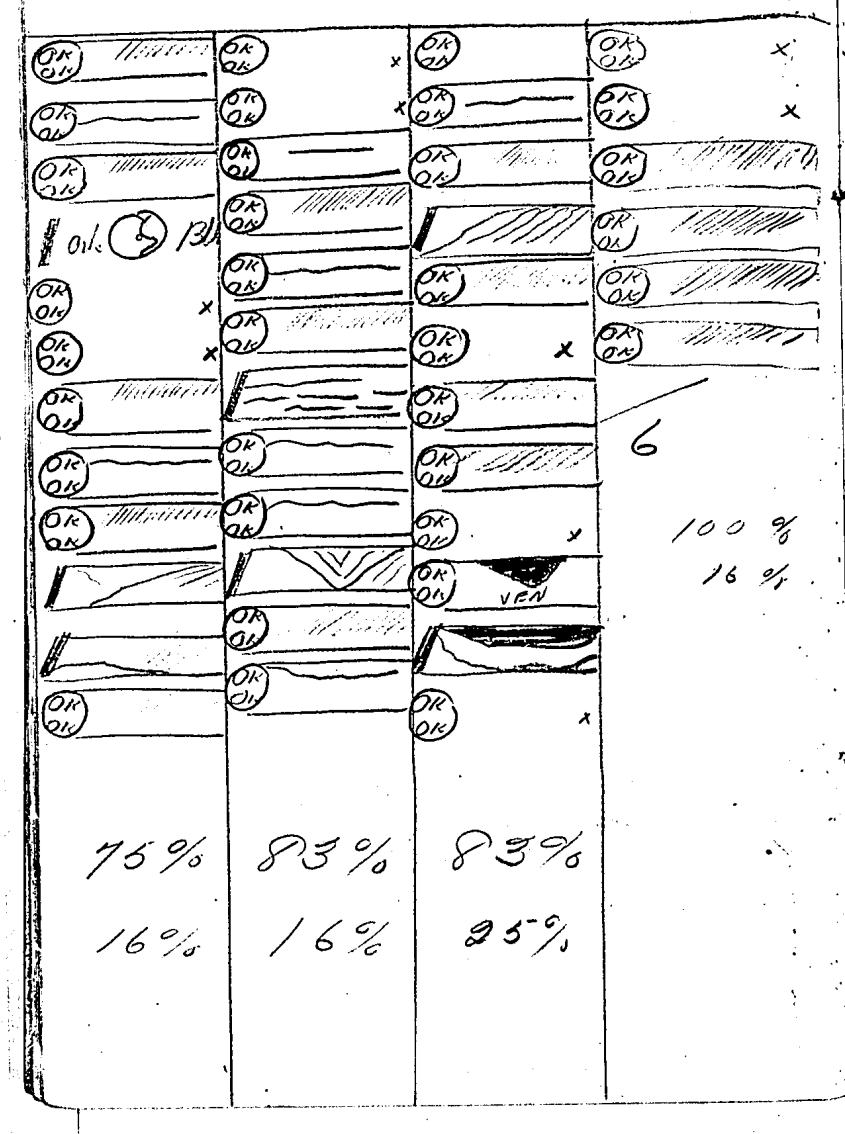
Make one dryer full of powder Using Varnish made with Alcohol of Specg 8.70. –

Make 4 rounds blanks Print Req

Cover Moulds. Dust

48 Made 2 pull Outs
46 Delivered

Only received 42



1315 E

Dup of 1314 E

4 Rounds blanks

made on 1261 Schedule

Yarnell & Greenfields

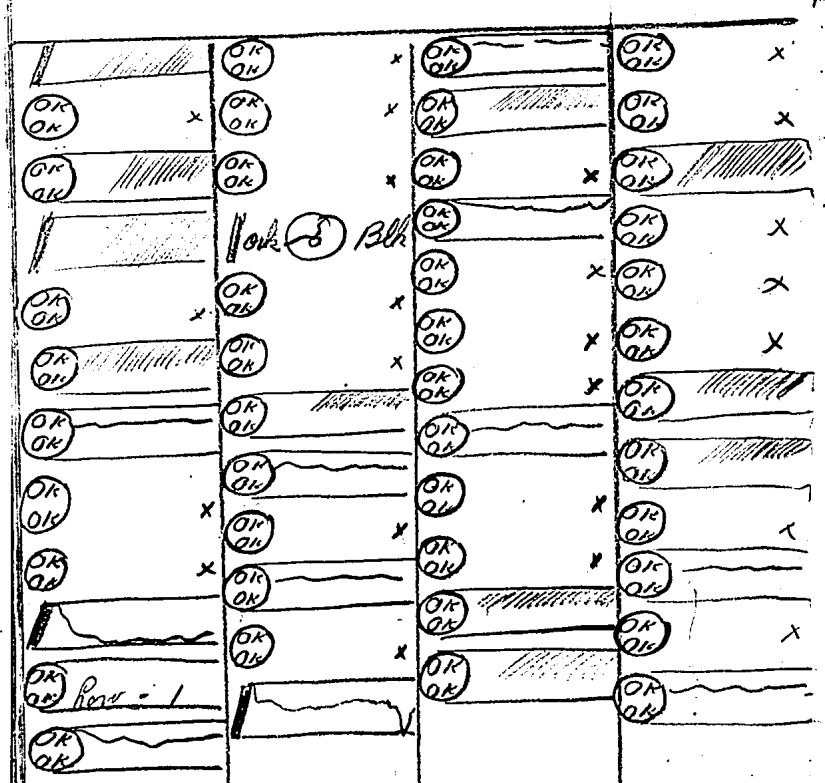
Paint Rag

leaves Moulds dirty

48 Made, 2 cracked, 3 part Chal

1 chalk spot. 42 Delivered

1316-E 9/18/16



75%	83%	100%	100%
33%	58%	50%	58%

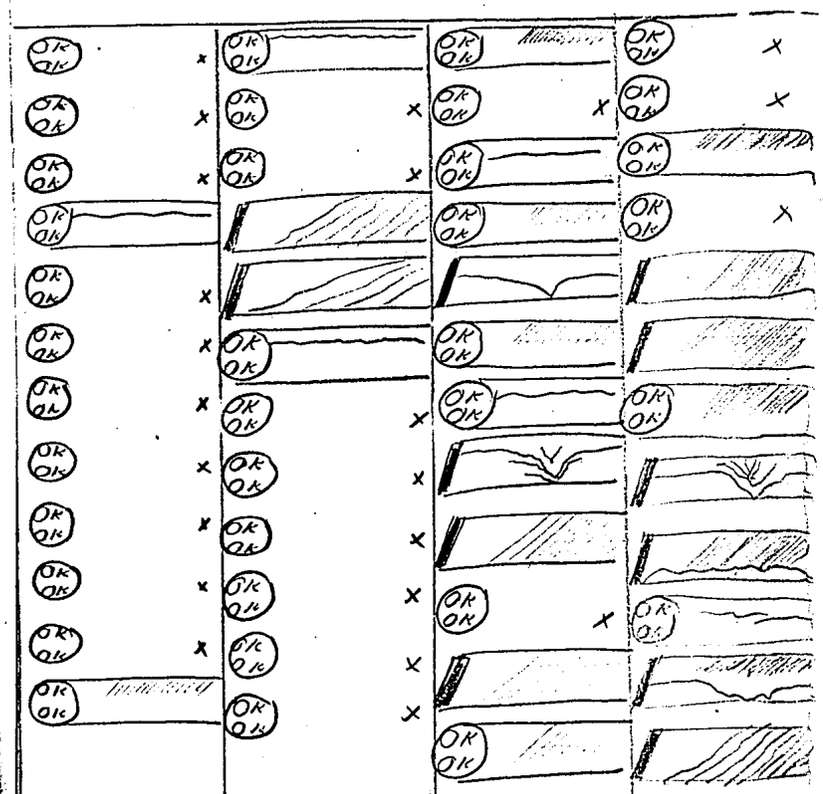
1316E

Take a bag of regular powder put in a closed box over a pan that has much of boiling water in — let it stay 24 hours — then make up 4 Rounds of blanks

Print Reg
leave Mold [illegible] in spots
48 Made 48 [illegible]

1317-E

2/24/16



100%	83%	66%	50%
83%	66%	16%	25%
			74.3 / 47.5

{ exposed later

1317E

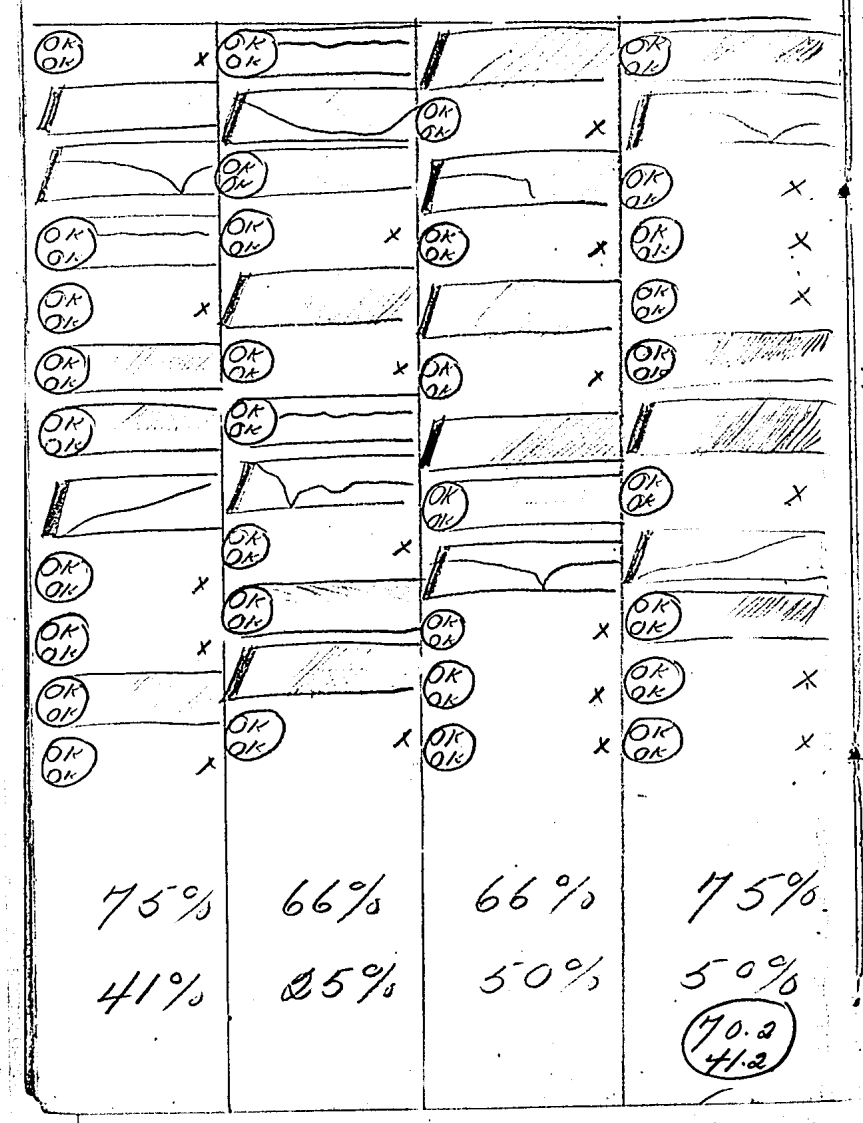
Hoffman

Make one Dryer full regular powder but use only Dupont fabric

Send to Raymond

Yard Print Reg

1318-E 9/14/6



1318 F

Hoffman

Make 1 Dryer full
Reg powder. but use
only foreign fibre

Send 4 Rounder up
Oteris plant +
Varnish Regular

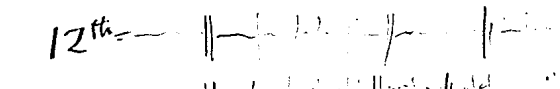
[2]

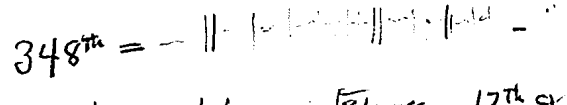
1319E

My C-Tis of these —

Amorphous Copper,

Nickel plated, heavy plated

12th = 

348th = 

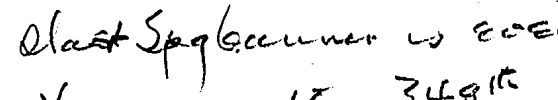
not any difference between 12th or 348th

the very good second on 348th —

Black Spg Gearwear is seen Gecco

V surface after 348th

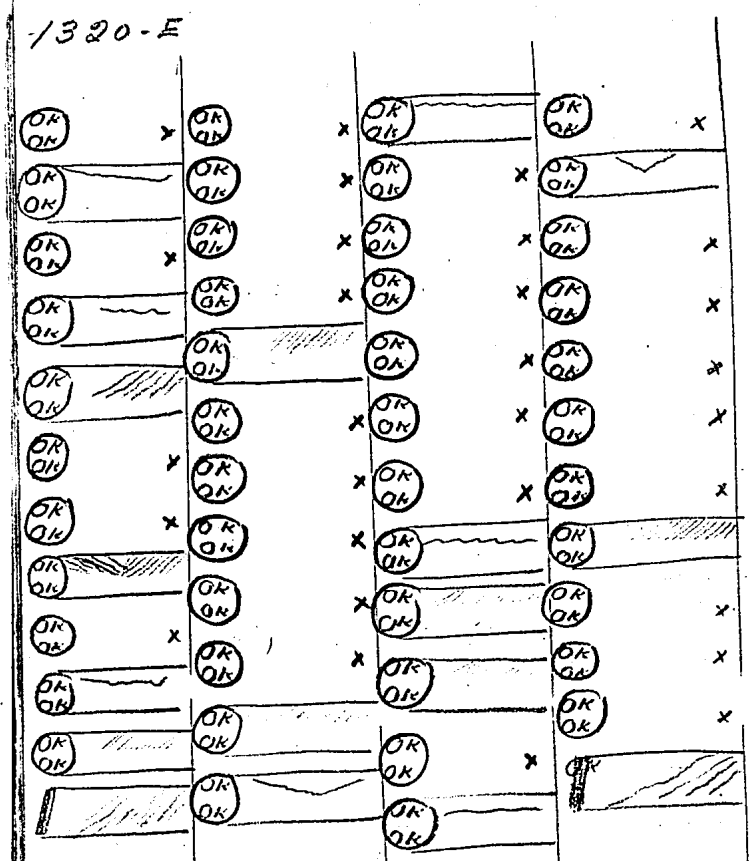
600th = about same as 348th the good

825th =  Cut out

Very Crackly surface 1st inch gradually gets better — No snaps that wanted cause a descrance

There has been terribly injurious between 600th or 825th

1320-E



91%	100%	100%	91%
41%	75%	58%	75%

95.5%
62.1%

1320 E

Print 4 Rounds Blanks

not bevelled, ~~Edges are to~~

~~the~~ take sharp Edges off with file — Varnish Edges

Reg one brushfull Var

Print Reg

Looks as if Square Edges were as good as Bevelled with square Edged Mouldings

1321 9/13/16

OK OK x	OK OK
OK OK x	OK OK
OK OK	OK OK
OK OK	OK OK x
OK OK	OK OK
OK OK x	OK OK
OK OK x	OK OK
OK OK x	OK OK x
OK OK x	OK OK x
OK OK x	OK OK
OK OK VEN. P.O.	OK OK
OK OK	OK OK x
OK OK x	
100%	100%
66%	33%

1321E

Fuehr take one powder blank mould & turn it out as it produces a blank which will fit the Record Mould holder with only 004 shake – it has 010 now – I suppose you can [illegible]

1322 F

Fred Ott weigh out 50 grains fresh black powder just as it comes from the screens

Put it in a closed box with warm water under it

after 3 hours weight

1.45 pm 50 grains
4.45 " 51.080 "
14 hours more 51.780 "

1323-E

9/

OK	OK	OK	OK x
OK		OK VEN	OK x
OK	OK x	OK x	OK x
OK	OK x	OK	OK VEN
OK	OK Rev - 3		OK
OK	OK	OK x	
OK		OK x	
OK	OK	OK x	
OK	OK	OK x	OK
OK		OK	
OK Rev - 2	OK x	OK	OK
	OK x	OK x	OK
			OK
83%	75%	91%	75%
00%	33%	50%	25% 81% 27.

1323 E

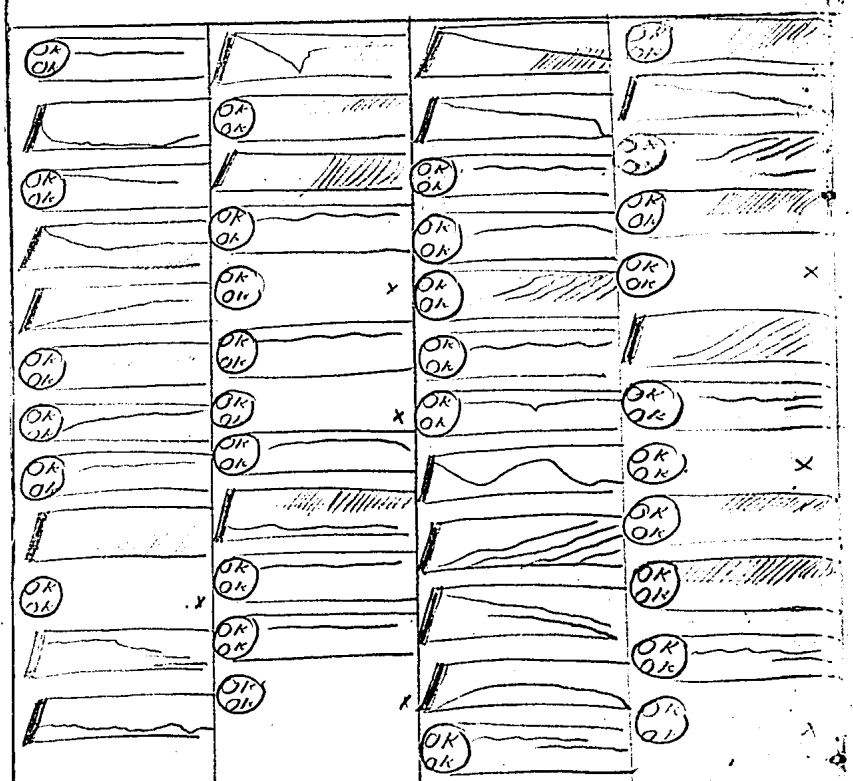
Powder from Mill with 35 mesh screen -

4 Rounds -

Req Var Req found

CJJ

1324-E 9/15/..



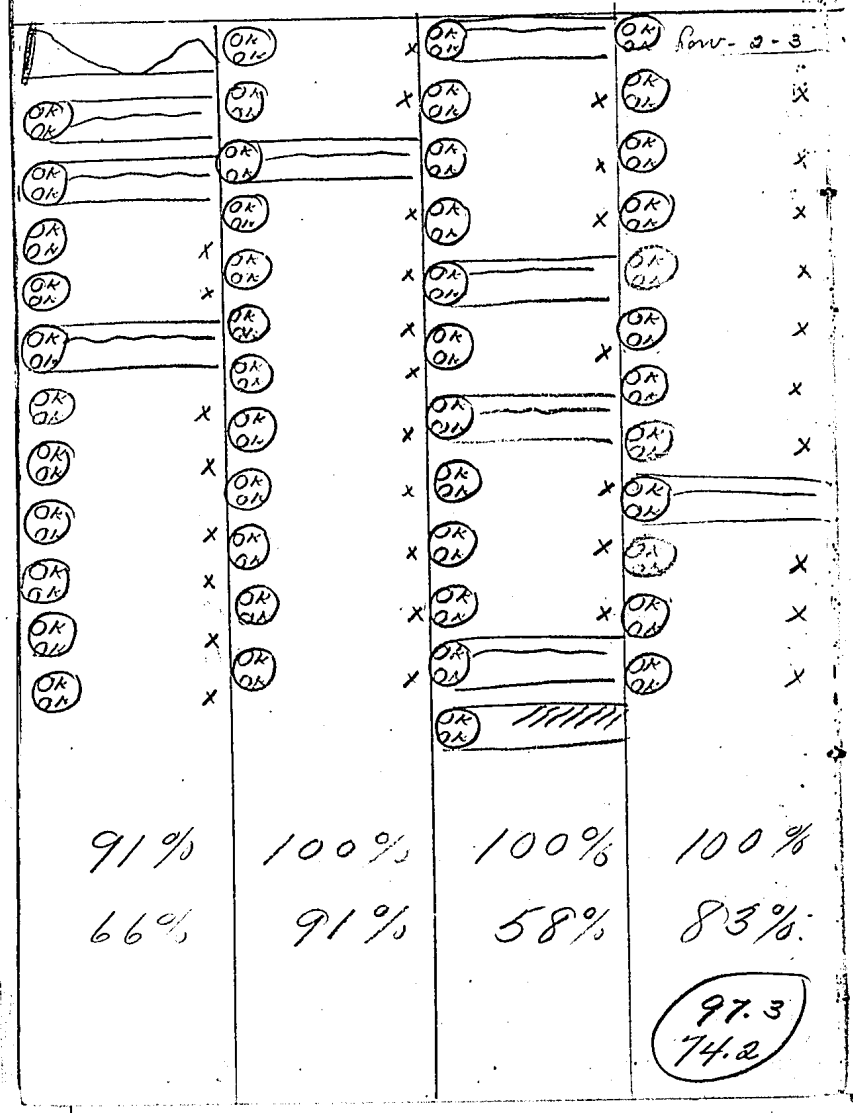
50%	75%	50%	83%
8%	25%	—	25
			62
			14.2

1324E

Dup of 1323

Except 30 mesh screen

1325-E 9/9/-



1325 E

Hoffman

When 20 mesh screen is on grendai, Run powder over screens 5 times to get all the Coarse you can through + Make 4 Rounds of blanks

Reg Varmint Reg

Permit

C35J

1326-E 9/19/6

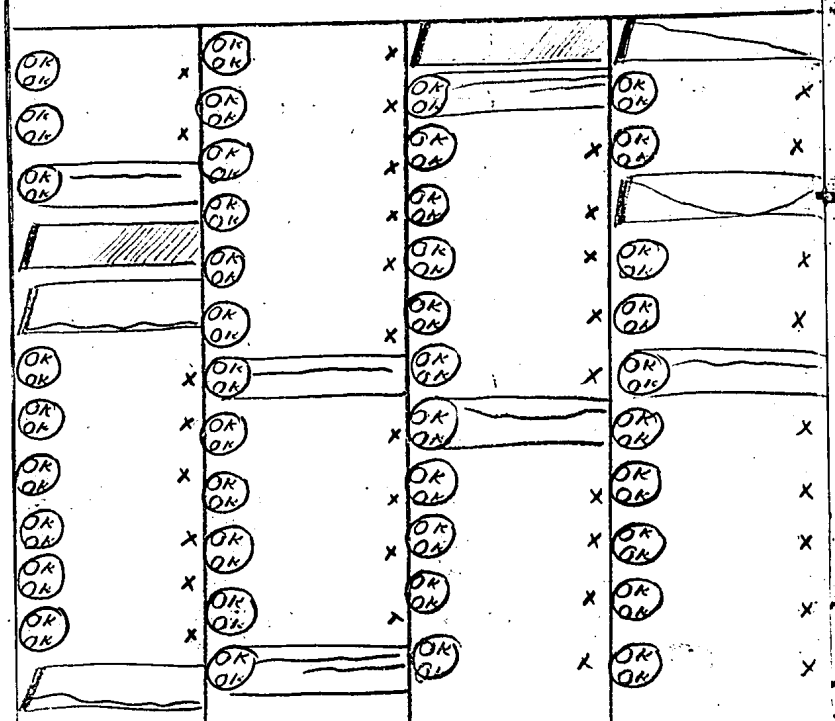
100%	83%	83%	100%
66%	41%	58%	66%
			91.8
			57.3

1326- Hoffman

Same as 1325 — except mould powder without screening —

4 Pounds.

1327-E 9/20/16



75%	100%	91%	83%
66%	83%	75%	75%

1327-E

Special Screens.

Steel — 24 mesh — 28 B&S wire
on Fuller mill.
Screened 5 times thru Newaygo screen —
Mould — Varnish and print regular

Fineness of Ground Powder { 73% passes 180 mesh
48% " 350 "
Sifted powder { 96% " 180 "
" 68% " 350 "

{ 390 pounds were ground in one hour,
271 " fine — 69.4%
119 " tailings

19½ minutes required to sift — passing 2 screens connected parallel so that half went thru each 5 times.

1st screening	— 89 lbs fine	301 lbs tailings	
2nd screening	— 81 lbs "	220 "	"
3rd screening	— 36 lbs "	184 "	"
4th screening	— 34 lbs "	150 "	"
5th screening	— 31 lbs "	119 "	"
	271	119 left	

Moulds clean.

→ see next page

1327-E 92%

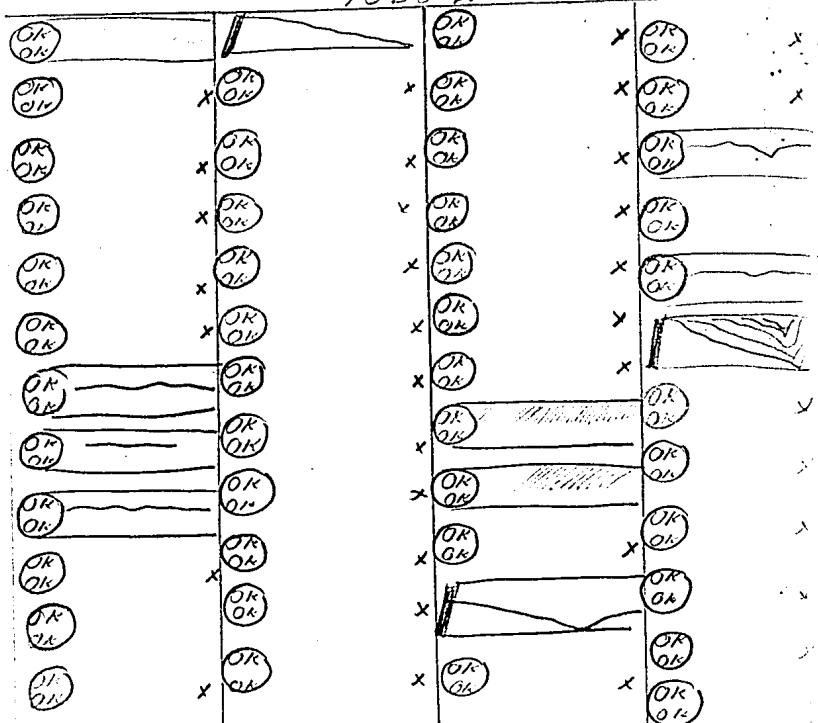
OK OK Low - 1 - 2	OK OK ×	OK OK ×	OK OK ×
OK OK Low - 1	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK Low - 2	OK OK —	OK OK ×	OK OK Low - 3
—	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK —	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK —	OK OK Low - 2	OK OK ×	OK OK Low - 2 - 3
OK OK ×	OK OK Low - 1	OK OK ×	—
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK —
OK OK ×	OK OK ×	OK OK ×	OK OK ×
91%	100%	100%	91%
58%	75%	91%	66%
83	91		83

1327-E 92%

OK OK ×	OK OK —	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK —
OK OK ×	OK OK ×	OK OK ×	OK OK —
OK OK —	OK OK —	OK OK ×	OK OK Low - 1 - 2 - 3
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK —	OK OK Low - 3
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK Low - 3	OK OK ×	OK OK ×
OK OK —			
			100% 66%
100%	100%	100%	General Average on 12 Rounds: Conv 94.3% Perfect 75.4%
83%	75%	91%	
83	83		C40

9/21/

1328-E



100 %	91 %	91 %	91 %
66 %	91 %	75 %	75 %

1328-E Special Screen –
24 mesh – 28 BWS Steel wire –
on Fuller mill –
Screened 5 times on Telvayge Screen
Mantel – Varnish and Pitch regular
(Same as 1327-E except that the
final tailings must be saved
to be regrinded with 1329-E)

→ See Next page →

92/12

1328-E

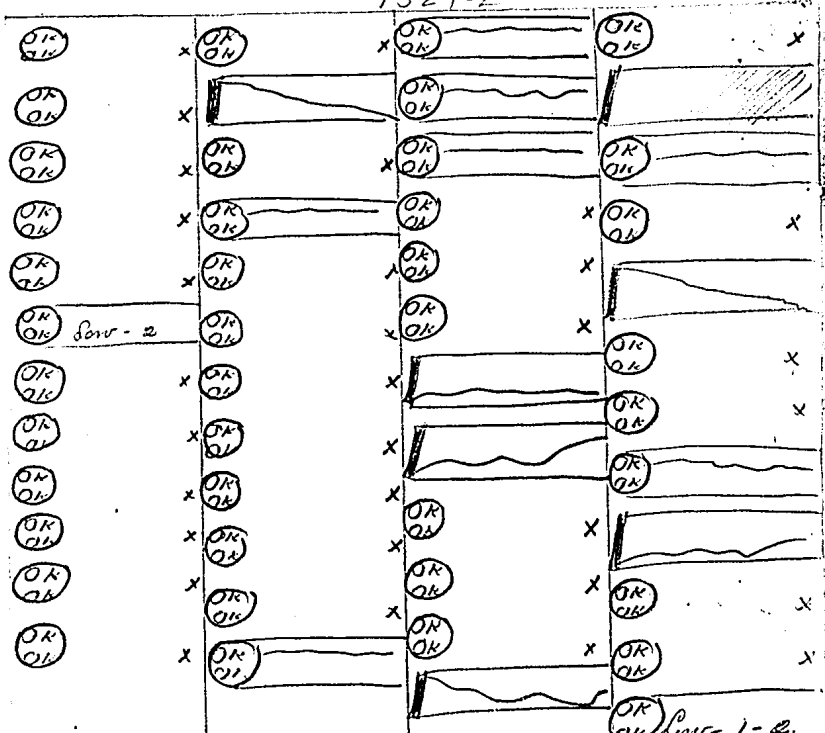
OK OK VEN	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×
OK OK	OK OK	OK OK ×
	OK OK	OK OK ×
OK OK ×	OK OK ×	
OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK	OK OK ×
OK OK	OK OK ×	OK OK ×
		OK OK ×
91%	91%	91%
6.6%	66	91%

General average on Comm. 95.
Perfect 75.

[45]

9/22/12

1329-E



100%	91%	75%	75%
91%	75%	50%	50%

1329-E

Same as 1328-E except that tailings from 1328-E are reground with it.

1389-E

Low - 3

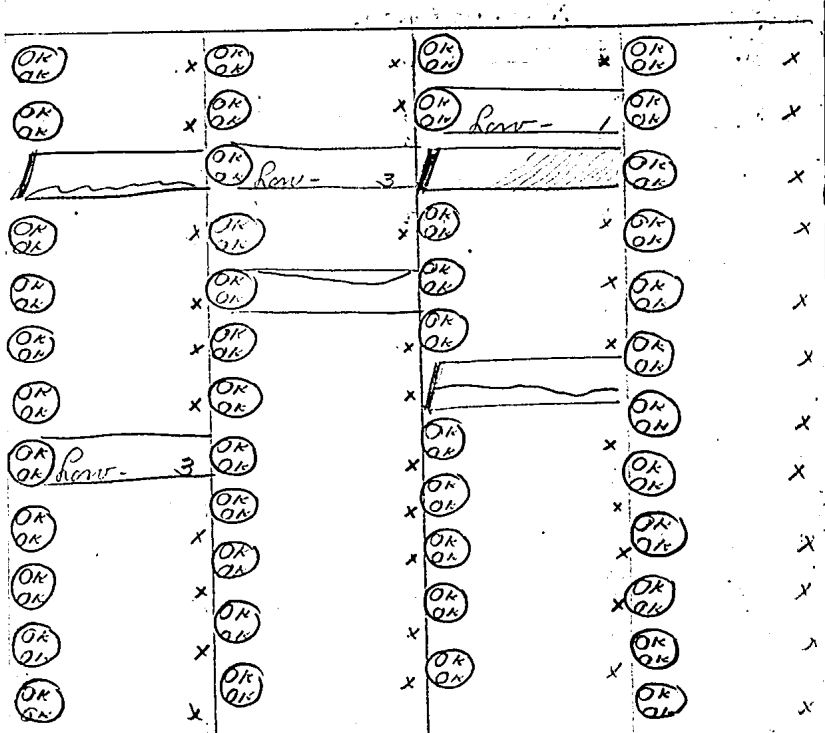
Low - 2

91%	100%	91%	100%
50%	75%	50%	75

Genuine wing
ow. 8 Pom
Corn 88.
Pelect 6 # 4

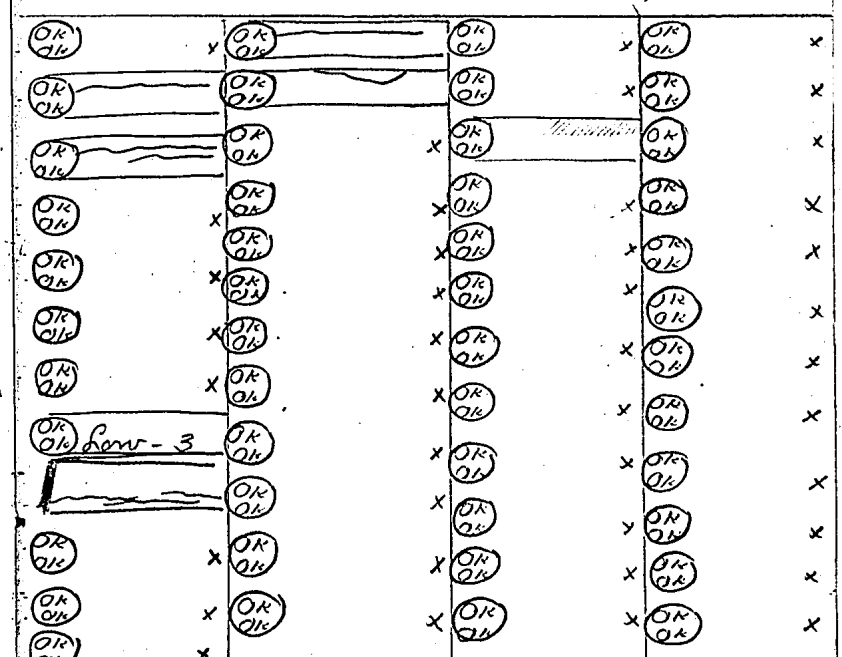
1330-E

9/23/6



91%	100%	83%	100%
83%	83%	75%	100%

1330.E Mr Hoffman
Shellac experiment.
One drier full of powder -
made with all hard black shellac.
Hold sample -
Mould varnish and print regular.



91%	100%	100%	100%
66%	83%	91%	100%

[51]

9/23/6

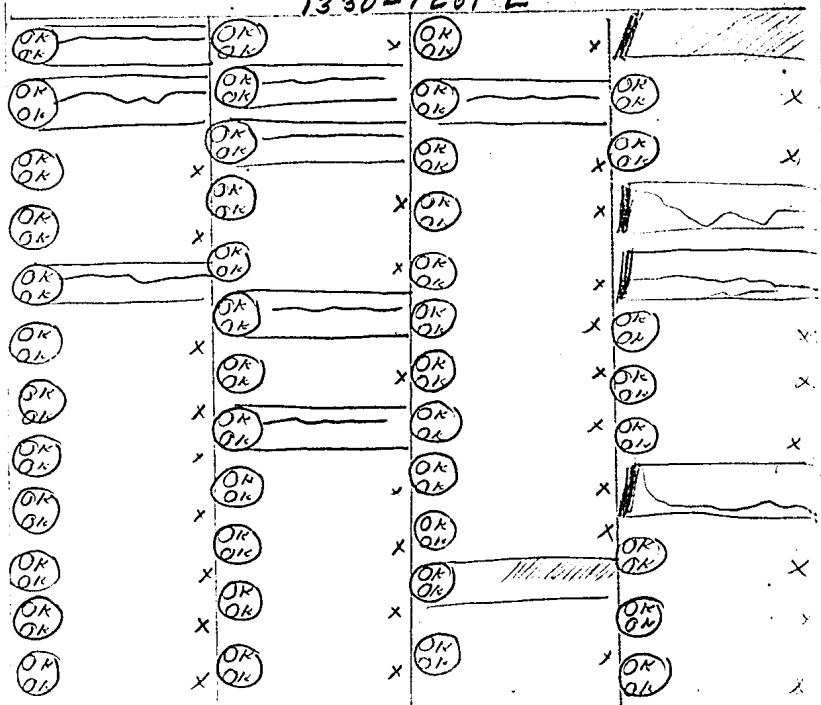
1330-E - 1261-E Schedule

100%	100%	91%	100%
91%	91%	33%	75%

1330-1261-E:

Same powder as 1330 made on 1261 schedule and varnished with 2 brushes -
- 8 rounds -

1330-1261-E



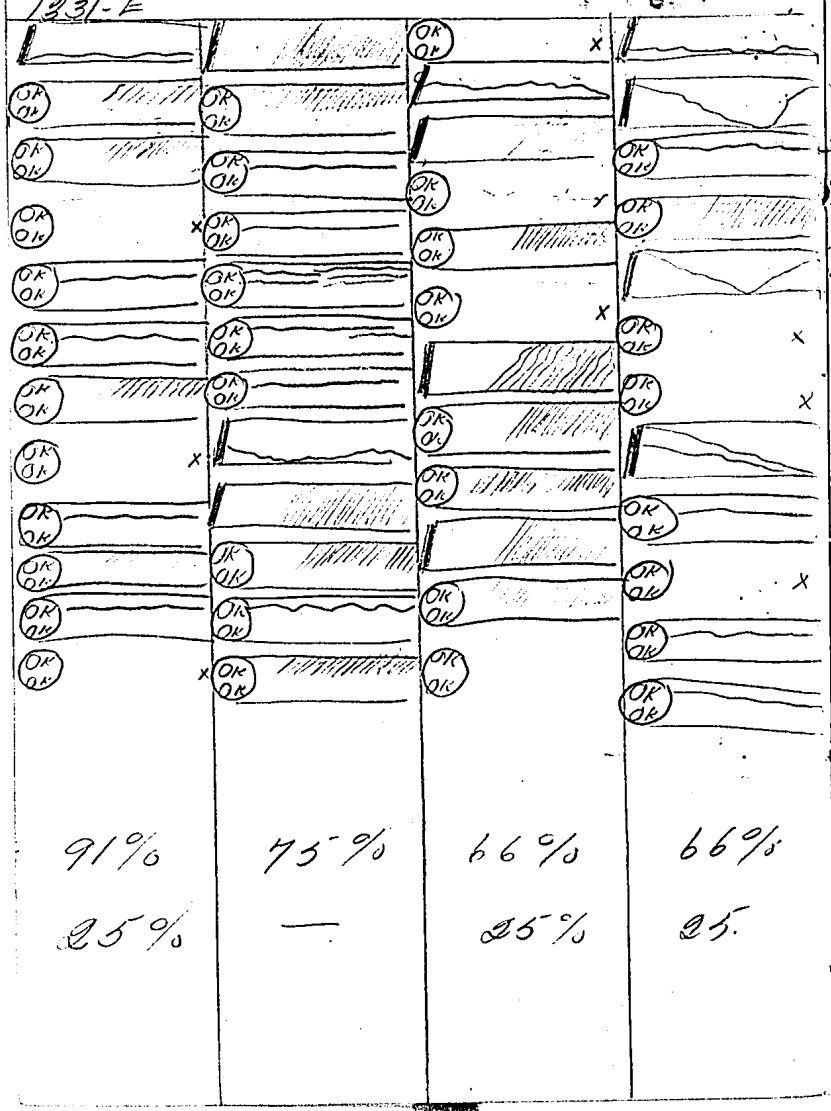
100%	100%	100%	66%
75%	66%	83%	66%

1330-1261-E

C55J

9/23/16

1331-E



91%	75%	66%	66%
25%	—	25%	25.

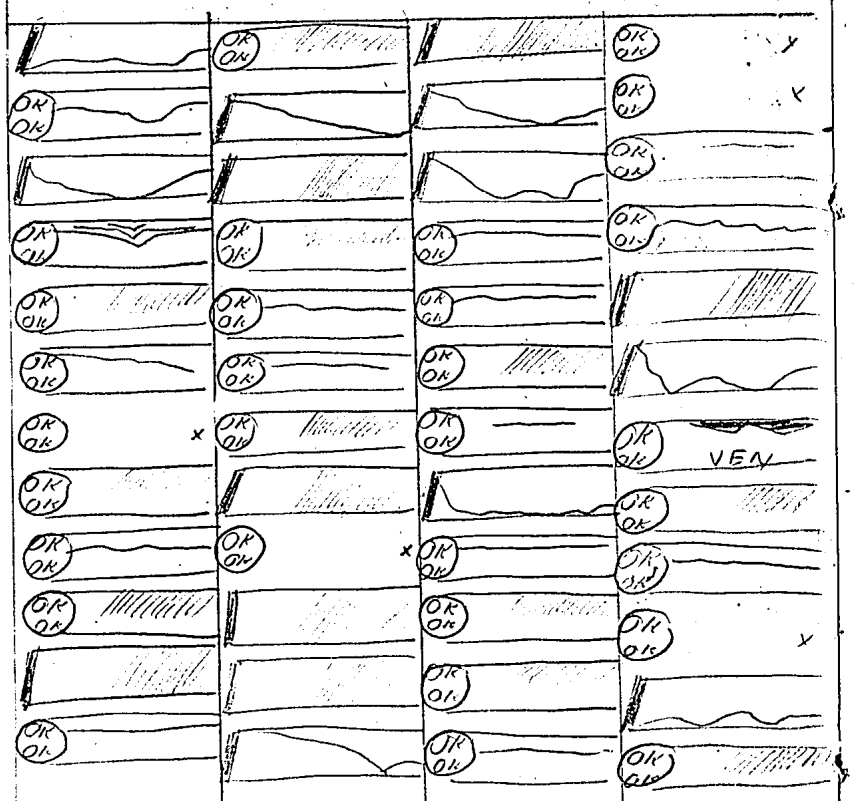
1331-E -

8 rounds regular powder moulded on 1261 schedule varnish 2 brushes - print regular. Regular powder is made from only the (shell) lac with all hard lumps removed, and blanks are running good now.

→ See next page

1331-E

9/23/10



75%	50%	66%	75%
			25%
8%	8%	—	

General Average on 8 Rounds

Conv.	70.5%
Project	14.4%

1332-E

Mr Hoffman will make 4 rounds on 1261 Schedule and send to Mr Kirden

1332-E

Mr Kirden will have corners-sharp edge taken off with a file –
Varnish with all the varnish it will take - 2 brushes –
Print in square edge moulds that have not been used for bevel edge blanks and have corners clean.
Send to Mr Miller in Building 4.

See next page.
for the Experiment

1332-E

1332-E

Date Oct.	Corrs.	Perfect	Round	General Average Corrs.	General Average Perfect
10	97.3	58	4	97.3	58
11	95.6	72.1	4	96.45	65.1
12	98.1	63	4	97.	64.3.
13	100	72.2	4	97.7	66.3
14	100	85.	4	98.2	70.3
15	100	57.3	4	98.5	67.9
16	97.1	63.8	4	98.3	67.3
17	100	68.1	4	98.5	67.4
23	100	85.	4	98.6	69.3
24	98	80.1	4	98.6	70.4
25	97.3	83.	4	98.4	71.6
26	86.2	57.3	4	97.4	69.9
27	93.1	79.1	4	97.1	70.6
28	95.3	76.3		97.2	71

10/10/16

1333-E

OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK Low - 3
OK OK ×	OK OK ×	OK OK ×	OK OK Low - 2
OK OK ×	OK OK ×	OK OK Low - 3	OK OK ×
OK OK ×	OK OK ×	OK OK ×	OK OK Low - 3. 3
OK OK ×	OK OK ×	OK OK ×	OK OK ——
OK OK ×	OK OK ×	OK OK Low - 3	OK OK ×
OK OK ——	OK OK	OK OK	OK OK ×
OK OK ×	OK OK —— ×	OK OK	OK OK ×
100 %	100 %	1.00	100 %.
91 %	91 %	83 %	66 %

1333-E Kircher

4 Rounds regular blanks varnished with 2 brushes varnish like 1261 - Give them all the varnish they will take in one coat—

Leave edges square - just take sharp corner off with file.

Be sure to varnish edges—

Be sure corners of moulds are clean—

Date	Loss	Perfect	Rounds	(General Average) Loss	Perfect
Oct 10	100	82.3	4	100	82.3
11	100	91	4	100	86.6
12	98	86.1	4	99.1	86.4
13	97.3	83	4	99.3	84.5
14	98	601	4	98.6	82.5
15	95.3	83.1	4	98.1	80.9
16	90.1	81.2	4	89.8	80.9
17	94.6	83.3	4	96.6	81.2
23	95.1	57.3	4	96.4	78.6
24	96	79.1	4	96.4	78.6
25	93 2	821	4	96.1	78.9
26	70.1	29	4	93.9	74.8
27	95.2	60.1	4	94.	73.6

1334-E

Lot - 2			
Lot - 3			
100%	100%	91%	91%
75%	100%	83%	91%

1334-E

Mr Hoffman —

One drier full of swept up powder from around mills — put through basement drier and then screened separately from regular powder first thru final screen then fine screen then final screen again,

1st Final screen
2 Drier 2 hours —
3 Regular fine screen —
4 final screen —

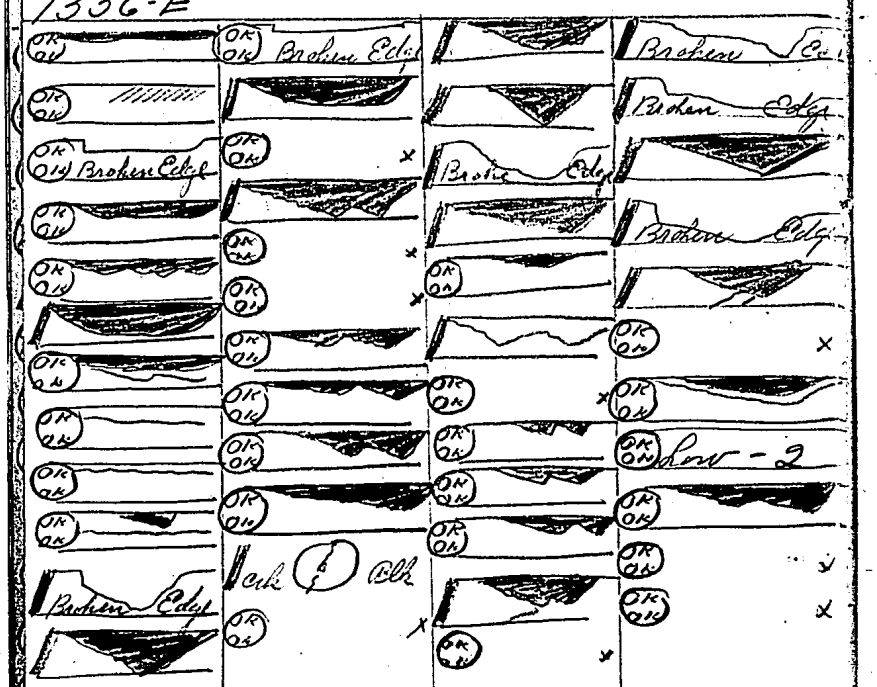
Mould and run thru on regular schedule — varnish and print regular,

(65)

1335 – Mr Kricher –
Take blanks with dry spots before placing in oven and give another coat of varnish on the spots – Send 4 rounds to Miller in No 4 Building.

10/27/1

1336-E



75%	75%	50%	66%
—	33%	16%	25%

1336-E Mr Hoffman —
Powder swept up from around units.
1st Thru final coarse screen.
2 Regular fine screen.
3 final screen again, moulded and run thru an regular schedule —
Varnish and print regular —
Send 4 rounds to Mill —

10/27/

1337-E

		OK	
OK	Bad Bull on Outlab		
OK		OK Low-3	OK
	OK	OK	OK
OK	OK	OK Low-2-3	OK
OK	OK Low 3	OK Low-2-3	OK
OK Low-2-3		OK Broken Edge	OK
OK Low-1	OK Low-3	OK	OK
OK	OK Low-2-3	OK Low-2-3	OK
OK	OK	OK Low-1-2-3	OK
OK	OK	OK	OK
OK	OK	OK	OK
83%	66%	91%	83%
25%	33%	33%	25%

1337-E
four rounds fresh powder
regular in every way,
Send to Miller in Building 4

C71

11/17/6

1338-E

Bubble in Varn	Bad Varn Spot	
OK ok	×	Bad Varn Spot
OK ok	×	OK ok ×
Bad Varn Spot	OK ok	×
OK ok	×	OK ok ×
OK ok	×	OK ok ×
OK ok	×	OK ok ×
OK ok	×	Bad Varn Spot
OK ok	×	OK ok ×
OK ok	×	Bad Varn Spot
OK ok	×	OK ok ×
OK ok	×	OK ok ×
83%	66%	
83%	66%	

1338-E

Mr Kircher:

Please varnish two rounds (24) regular blanks first with one coat varnish and after it dries apply another coat before placing in oven.

Print regular and send to Miller in Building 4 —

1339-E

11/29/

OK OK x	OK OK x
OK OK x	OK OK x
OK OK x	OK OK x
OK OK x	OK OK x
OK OK Low - 3	OK OK x
OK OK x	OK OK x
OK OK x	OK OK Low - 3
OK OK x	OK OK x
OK OK x	OK OK Low - 2
OK OK Low - 1-2-3	OK OK x
OK OK x	OK OK y
OK OK Low - 3	OK OK y
100%	100%
75%	83%

1339-E

24 blankets with low spot due to bushings varnish and print regular - sent to Miller in Building No 4 -

1340-E 11/19/16

75%	66%
50%	41%

1340-E

One quart regular 1511 varnish without lamp black – viscosity 1m 25 sec

This varnish to be used on blanks that have been varnished in regular way ready to go in the oven, so that the blanks will have two coats varnish – one with lamp black and one without.

Print regular and deliver to miller in Building 4

To be examined for surface as well as other defects.

1340-E-3 Same but 3 min viscosity.
1340-E-2 " " 2 min "
1340-E-1 " " 1 min "

See five pages back in regards to these three Experiments

1341-E 11/20/16

OK	OK	OK Low-3	OK	OK
OK Low-2	OK	OK Low-3	OK Low-2	OK
OK	OK	OK	OK	OK
OK	OK	OK Low-1	OK	OK Low-3
OK Low-1	OK	OK	OK	OK
OK Low-1	OK	OK Low-2-3	OK	OK
OK	OK	OK	OK	OK
OK	OK	OK	OK	OK
OK	OK	OK	OK	OK
OK	OK	OK	OK	OK
OK	OK	OK	OK	OK
OK	OK	OK	OK	OK
OK	OK	OK	OK	OK
OK				
100%	100%	100%	100%	100%
75%	100%	66%	91%	83%

1341-E

Mould 8 rounds regular way except leave off the 1/8 soft rubber sheet in press.

Varnish & print regular and deliver to Miller in Building 4

OK Low-3	OK	OK
OK	OK Low-1-2	OK Low-3
OK	OK	OK
OK	OK	OK
OK	OK	OK
OK	OK	OK
OK	OK	OK
OK	OK	OK
OK	OK	OK
OK Low-2	OK	OK Low-3
OK Low-2	OK	OK
OK	OK	OK
OK	OK	OK
100%	100%	100%
75%	91%	91%

1342-E

11/2/16

OK OK	x
OK OK	x
OK OK	x
OK OK	x
OK OK Grey Spot	
OK OK	x
OK OK Low - 3	
OK OK	x
OK OK	x
OK OK	x
OK OK	x
OK OK Pull Outs Label	
100 %	
75 %	

To be held & tested by Mr Edison

Retested Nov 27, 1916 by Mr Edison
to be retested Feb. 27, 1916 by
Mr. Edison

1342-E

Print over Varnish Enough for 24 blanks. Varnish same as regular Except 8½ 6/4

Varnish blanks & bake regular way - print one scrubed.

1- very cracking & hard general
2 " "

3 cracking & hard general
4 "

5 hard general
6 cracking hard general -

7 hard general - cracking
8 fair "

Not a good surface among these all very bad

C813

1343-E 11/21/16

Ok Ok	x
Ok Ok	x
Ok Ok	x
Ok Ok	x
Ok Ok	x
Ok Ok	x
Ok Ok	x
Ok Ok	x
Pull Out ammunition	
Ok Ok	x
Ok Ok	x
Ok Ok	x
91%	
91%	

To be held & tested by Mr Edison

1343-E

Duplicate of 1342-E but 9½ 6¼ —
Print one round

1344-E 11/30/16

OK OK ×	To be held & tested by Mr Edison
OK OK ×	
OK OK ×	
OK OK ×	
OK OK ×	
OK OK ×	
OK OK Low - 2	Test Nov 27, 1916 by Mr Edison to be retested Feb 27 1917 by Mr Edison
OK OK ×	
OK OK ×	
OK OK Low - 3	
OK OK Low - 3	
OK OK Low - 3	
100%	
66%	

1344-E

Duplicate of 1343-E

But 12 - 6/4

Print one round.

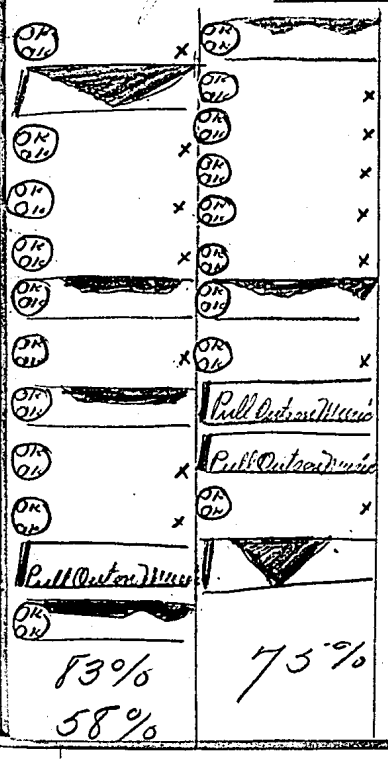
1 Very loud Crackly & general
2 fair general - in fact good - no cracklets -

3 Loud general not great.
4 " " "

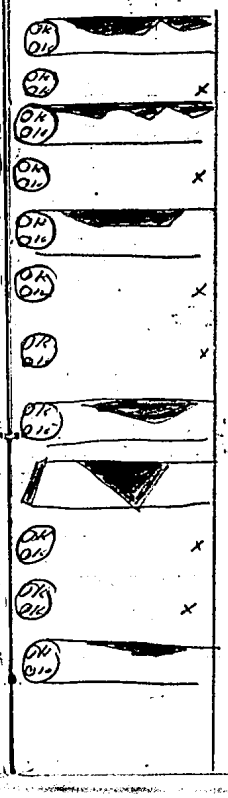
5 Loud general - Crackly
6 Horribly general & surface & Cracklets -

[85]

1345-E #1 Same as 1340-E
Only 1 minutes Viscosity
Yes 24 Blanks & print
regular way sent to
Bldg # 4



1346-E # 3 Same as 1340-E
Only 3 minutes Visc
Yes 24 Blanks & print regular
Way sent to Bldg. # 4



1347-E

Make up a large batch of Peabody Garnet Lac.

There is one bag. use it all - make all into blanks.

Note any differences between garnet & regular TN - Inspect blanks well and run thru factory. Have records inspected.

72.9% passed

Eyr. Mechanical

613

parallel Cks 100

Radial. 32

91% of Total 2123 OK —

1348 E

Make 1/2 dozen blanks
with old small brush
one coat, bake Reg
Print one record from
the test master mould
on one blank, save the
other blanks —

1349 =

Peculiar thing about this is large Pull out in Labels —

This should be easy to Eradicate —

Probably not enough fibre to give strength Enough to withstand the deep Malta pull —

Apparently no improvement in general surface which is strange

1349 - E

Make up one (drier full) lot of blankets 4 chalk 3 fibre 1 lack.

Save 50 good ones for Edison — Run balance thru Reg & have % inspection

69.3 % passed

Eye Machine & formal

345 Records

Pull in Labels 27.5

Parallel Cks 5

no radial

Drop test 7-8-20-4-13-9- (61)

This is good Enough

1350 E

Varnish 6 Reg blanks
Reg bake,
Use Varnish marked
China - ~~the~~ shake it
well before pouring in
Cup -
Sends blanks to Edison

Print on test machine
The surface was very
soft - 8% China Clay

[95]

1351-E

Curious - Blank yellow
fosi - print sounds about
regular perhaps little
more scratch -

No lumps at all

Considering Cutting silica
not promising as doing
away with scratch

Record looks OK

1351 E

Varnish 6 Reg blanks

Use varnish marked

Kieselghur - shake it

well before using

Bake Regular

Send blanks to

Edison

Print from test master

Nov 28/16

1352 E

Tried putting Neg Varn on - Celluloid & printed - it stuck to mould only 1/3 stuck on Celluloid - This not good - as it will not stick -

One was good - This is being grafted & moved made -

Print it

1353 E

Varnish 6 ~~record~~ blank with Var
marked No black.
Bake Req—
Send to Edison

The scratch is about normal
but its Very Sharp hence
more noticeable,

Phenomenon

[101]

Make Varnishes with
Carbo Lime
Magnesia -

1354E not tested yet

1354 E

Reg varnish without Lampblack
to which is added 5% by
weight of fluffy Lampblack
made by Smith & mixed in
Spenning Chemicals mixer

Varnish & blanks -
from Battle marked Smith black
Reg way & bake reg
Send to Edison & tests no better
than Reg black black
~~The above varnish Reg~~
~~black fluffy lampblack~~
~~but of how black is made~~
~~Chemy~~

1355 E

Peculiarity of this is -
absence of parallell Cracks
& Excess of radial Cracks.

1355 E.

One drier full powder - first
Mix dry (without shellac gum) in mixer
wood - chalk and lamp black.
Then grind in large Fuller mill
Then mix with gum regular
Dry grind and screen regular -
Mould regular - Keep record of
inspection - print regular two
rounds on new moulds,
Hold two rounds unvarnished -
Print others and keep record of
inspection,

~~Tried 1 brake 17 shapes~~ -

84.4 % passed

Eye - Mechanical & formal
366 Records
PO in labels 12
Radial — 26
parallell 1

1356-E Smith Lampblack
Varnish 6 regular blanks
print 2 and send others
to Mr Edison in Bldg. #4

~~Nelson~~

1357-E

Minwax Plain Varnish 2

Mark with this Varnish Regular
varn + take to Compact.—

This is regular Var, which is in little
pot with Spring finger to break
clots of lampblack

Print 2 + Send to Mr. Edison
in Building # 4

~~N. C.~~

Surface of blanks not near as good as regular
29 made 15 Discards - 5 were cracked 10 had pull outs
~~off~~ 14 sent up stairs to Varnishing, after Varnishing
5 more developed Cracks. One selected for
Printing which was OK gave crack after
Printing - The blank itself Cracks, OK
around Edge — Edge shiny all around for
1/4 @ 3/4 wide, poor loading for the most
blanks Cut much harder than reg
Dropped 2 both went 20 drops

Music much louder than Reg + scratch no
more if not less than regular

In strike off at loading hopper powder seems
to pull apart, powder packs form in small
press 3/16 strike off - on turntable powder
pulls apart on turntable strike off Leaves mouth
Cloudy + dirty

The secenate may have more contraction
than Resin alone may be reason
blanks Crack -

1358 E

Hoffman

Make 50 blank batch

Run 4 Rounds Varnished
Regular Glycol X Lampblack
Varnish — Send to Edison

Wood $28\frac{1}{2}$ lbs
Chuck $21\frac{1}{2}$ lbs

Var

10 lbs Resenate X - Lower Oil, Double decomp
35 lbs alcohol -

surface of blanks not as good as Reg —

In strike off at loading hopper, powder seems to pull apart. powder packs form in small piece - 3/16 strike off strikes off fair — leaves mounds cloudy & dirty —

23 made - 9 Discards — 6 cracked 3 pull outs 14 ok —

After Varnishing 2 more developed cracks

Surface as good as Reg but dont seem as good as 1358 & no louder than Reg 2 Dropped balls broke at 17 Drops — 1/4 of Edge shiny

Cks —

shows 1358 & 1359 E dont have proper loading — too hard around Edge which probably Cause of blank Cracking —

1359 E

Dup of 1358 E

Except plain Resin —

1360 E

Varnish phosphate Zinc
in place Lamp & Cock
12% to Var
Var 6 print 1 on
test moved

Ng + Rough opals

Phos Zn is very fine leaflets

[115]

1361 F

Varnish over second
graphite - 12% of the Var
175 Var
21 grms graphite —

About same as Reg
no gain — scratch just as bad
fairly black not as
much as Reg

1362 E

Surface fairly good but smooth ~~[illegible]~~ mould little pinnes Chip out they probably Crack by pressure + chip out Sizes about 003

Too much lamp black makes it brittle

Same with Castor oil also brittle, but smoother I think

1362 E

Var with 10% Smith Lampblack –

Var 6 print 1 on test print

175-gms Var 17.5 black

Blank when varnished shows a Continuous surface without depressions or holes – but shows ~~[illegible]~~ a fine cloth all over –

While the 1368 with same amount of Smith black but with 5 grams Castor oil in 175 gms Var is almost like a Crkenofer + VERY few specs –

1363 —

Cuts slightly so as to make sharp snap on smooth surface rather sharp — not [redacted]

1363 E

175 Varnish
26 grams Lampblk

Var with 15% of the Var of Smith Lampblack —

~~Dried~~ Var 6 permit 1 with tail mould

~~1336~~ 1363½

Cuts — general surface not so sharp as Reg —
Varnish goes on very bad
too much Lampblack

1363½ E

dup of 1363 E
Except 20% Smith (Black)

1364 E

Varnish - with
12% of ferrous phosphate
Var. 6 - panel 1 with
test mould

made
Varnish - very lumpy -
black -

This gives a rather loud
surface & no advantage

1365 E

China clay we have has got in it — this I removed by Levigation also found full spread of wood that floated — This can be got out by following Item 3 or 4 thickness of cheese cloth after clay is suspended in water.
This batch after pouring off water after settling I added large amount of Alcohol & filtered took 10 hours & dried on plate lumpy — but took a lump put in alcohol & shook vigorously all floated & is very easy to settle out.

1365 E

Van with 20% of purified China Clay
Van 6 — permit 1
with test mould

175 grms Van
35/grams, this is 20%

Results — Very bad Varnish pulled out & checks & very irregular Cocoon
Too much China Clay
Wants about 5% probably
3 or 4% better as 5% was best yet —

[125]

1366 =

The making of Resinate

This works fairly well - it dont go solid like little Experiment

12 lbs Rosin took up 2 ½ lbs of Magnesia, when got very thick - Even with high temp

Dont think all Mg has combined

It stayed quite liquid with 2 lbs, after pulling in little more it suddenly changed color to deeper red.

This seems to be the point when it starts to rapidly thicken.

Rosin was not strained, full black chips, must use higher grade & strained

Pressed 3. one had pull out — Surface soft + very open

PROMISING — Good results

The 3 were on old moulds & mean changed all chemicals up yet necessary

1366 E PROMISING

50 blanks ~~[illegible]~~.

Dup of 1358 except

Use Rosin melted + feed with Carb Magnesia till melting point goes way up —

only 3 OK

Blanks 1½ lbs out of 13½ lbs resinate used was unsolvable, the free MgO + resinate ground powder 96½% 1 lbs 150 mesh powder tears in strike off — 3/16 strike off

Moulds dirty —

36 Blanks made 23 were pull out 10 cracked — The schedules must be changed to make this work — Sent PO to Mellon room

1367-E

After process made go afore in Cani —

97% Born 180 -
pks ok 1/4 strike off

Lenoxo Manuels duty
6 made 3 discarded for
pull outs —
if this can be solved
its pronouncing

1367 E

50 blanks —

Dup of 1358 Except

Manila Copal wood
Except 8 lbs Copal 35 lbs Alcohol

Manilla Copal dissolves very easy in alcohol,
Congo Copal dont dissolve about 1/8 of it dissolves & the insol part is tough & very flexible when moist with alcohol & like Rubber. This may be good for a lot of things by thoroughly removing the resin by alcohol

Phenomenon

African Copal is all this flexible stuff & think

1368 Made

175 g Var
5 grm Castor oil
10 grms Smiths black

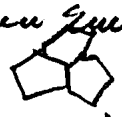
The Blank is very black & shining — Has a fine concave surface without holes or depressions — & very few specs as compared with 136 z which is same without Castor oil —

Phenomenon — Evidently Castor oil in Var prevented blank from soaking up Var & the whole is on the surface — BOSS if it will prove a good surface —

Perhaps Glycerine will do same thing — Point fairly smooth but smooth side chips off by reproducers NG

1368 $\frac{1}{F2}$ F

175 grms Reg Var 10 grms Smiths Black — 17 grams Castor oil —

Rough, looks awful — pulls out on smooth side of record — Its an emulsion or in micro chaos  like honey Comb — Cuts — NG — not promising Castor oil NG —

1369 = seems a little softer than Reg. but has apparently more Cracks —

Smooth side has also checks at certain places —

Looks favorable for surface.

V

1369E

Hoffman

Make 50 blanks.

28 ½ lbs wood fibre
21 ½ lbs Chalk
7 pounds of clear Rosin
30 lbs. alcohol —

Keep inspection sheet send them up to 6E Varnished Reg — one to 6E printed + one blank cut to Edison

Hoffmans Report = ground 97% fine — 180 powder packs good — packs from in small press, shows lifts when rubber pad taken off 3/16 strike off — leaves moulds provided but clean — 34 made of debris
8 pullouts 2 Cracked 24 OK
70.5% OK

1370 - Considerable better than Regular in appearance of General - quite not so loud or sharp as Reg - Dont Cut on smooth side - looks favorable -

1370 E

Hoffman

Make 50 blanks with Regular Shellac Varnish

Use
28½ lbs Wood
21½ lbs of China Clay

make Inspection report, send up stacks to be Varnished print 1 & send 1 blank to Edison -

Hoffmans Report - ground 96% thru 180 powder bonds good - packs form in small pieces, shows lefts when rubber pad Taken off 1/4 strike off - leaves mould dirty both top & bottom -
31 made 12 pull outs - 1 machines defect
180K - 58%
lost some fine powder in sifting

C(115)

1371 E

Music shade louder
general surface shade
more soft than Reg
Smooth side much
softer — no cutting 3 times
over

1371 E

Hoffman

Make 50 blanks —

28 ½ wood fibre
21 ½ lbs China Clay
Varnish
10 lbs of Rosin + 35 lbs
Alcohol —

Hoffman Report — ground 96% through 180
powder loads good packs firm in
Squeall press — chows left colon rubber
pad taken off 3/16 strike off —
leaves moulds dirty on top plates
made 14 — lost lot of Clay in mixing
9 pull outs — 5 OK 35.4 %

1372 E

Varnish without Lampblack
175 grams -
17½ grams China clay
5 grams Castor oil

Shade after General Chart
Req — The smooth sides
Cuts very bad — too
much china clay —
Castor oil preferably
ng = Emulsion

1373 - Rougher Chau
Req - Very Good Varnishing
Cuts both ends NG

1373 E
Varnish without Lampblack

175 grams
14½ grams China Clay
15 grams Castor Oil

1374 E

Hoffman

Make a 50 blank batch

4 wood, 3 China clay 1 Rosin

Make only 6 blanks save the balance of the powder

Send 6 up to be varnished & baked regular - One to be punched & other 5 sent to Edison If the first 6 are heavily all Dad send up what you get out of 6 made

1375 E

Dup of 1374 E
Except 3 wood 4 China Clay
+ 1 Resin —

[145]

1376 E

Varnish - 175 grams -

20 grams of Paramedophenol Base

Varnish 6 percent 1

Full of spots not filled - bubbles

too much paramedo

Then making one with

only 8 grams

1377E

Varnish — 175 grams —
20 ~~g~~ grams of Paraphenylenediamine

Var to print!

full halos due to bubbles in
Varnish - too much
Paria — an machinery
one with only 8 grams
surfacefoam - 8 may be
grams

1378E

Varnish 175 grams —
20 grams Hydroazobenzol.

Var 6 — print 1

Surface accus louder than
Reg — Smooth side
shows lots yellow spots
as of bubbles under
Blank shows very bad
bubbles — too much
Hydrazo

1349 —

Long long ago horrible
Crackels - smooth steel
shows the pits seen in
the working Moulds in
Clancys room some days
ago —

Flora Bella good surface —

{ of 358. inspected 93.3 OK —
{ Second lot of 571 88 1/2 % OK
total 929 — 90.1 % OK.

~~[illegible]~~
Best 33 of discards was
pull out in Old Kubals — 2'

1379 E

Make a Dryer full 800.
Regular powder Except One
& two tenths parts of Dextrine
I think from the fine surface
on our Clankes that our regular
mix is too dry — That our
Condenser works better &
dries powder too much &
it needs more Lac

Send up & have special
report made on this
lot Send 1/2 dog seconds
to Eaton

6 printed all ok mechanically
surface reg Crackels depends
on state of moulds

1380 E

ground 96% thru 180 powder
tears apart in strike off —
packs from in small pieces
chaos lifts when rubber pad raised
3/16 strike off

Leaves moulds frosted & dirty 32 made

22 pull outs all deserving

If pull outs got rid of would be OK

printed 10 — 1 broke in

Surfaces about like Reg —

This is PROMISING

If can stop sticking "Tanning Solution"

I propose diluting Condensate Can twice back alcohol paint lip & bot moulds & stand 5 min then make blanks

1380 E

Make enough powder

50 blanks —

28½ wood

21½ Chalk —

6 lbs Rosin — 10% Ester

27 lbs Alcohol

Make them all up into blanks

20 g. stannous chloride per gallon denat alcohol used to wash copper moulds stops sticking absolutely.

100 g. stannous chloride per gallon denat alcohol used as wash on powder blank moulds stops sticking on blanks absolutely.

1381-

Printed 3 on Reg Moulds
Surfaces not very good
as fine swaps so numerous
on moulds they coalesce into
good surfaces & make it
louder -

Made & printed 12/8/16
inspected 1/29/17.
4 prints all OK. 2 Blanks OK.

1381 E

Printed 12-8-16

Var 175 grams
10 grams finely powdered
Resenate of Lead -

Much softer than Reg.
Blank is a phenomenon, its
beautifully shiny glassy surface
scarcely a piece shows a crack, air
spot, its absolutely continuous
like and Excellent blank
This is Very PROMISING

FINE

1382 E

Varnish

175 grams —

8 grams China Clay

Var 6 permit 1

Little more scratch
than Reg — has more
Crackle — Smooth side
however is pretty good
better than Reg
Blank very Clotting +
dull like Reg

1383 F

Varnish

175 grams

6 grams chinaclay

Var 6 - percent 1

Blank looks different from others Var appears as if it had all gone in the blank

Thinkscratch is little more than Reg - It dont seem as loud as Reg -

C1613

1384 1/2 E

Varnish

175 grams

5 grams Smiths

Lampblack

Vac 6 permit 1

Blanks look shiny all over but not near as good as 1361 for surface, more depressions & blots now within but its next to 1381 in looks

Very good surface, soft only few craze - much lower volume to surface

This is getting near to what is wanted VERY PROMISING

1384E

Varnish

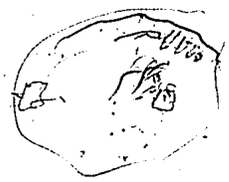
175 grams

8 grams Paramedophenol Base

~~[illegible]~~ Varnish le percent 1

This gives a better surface than the regular less oil & softer — both on test mould —

There is something with this —



(165)

1385 F

Varnish

175 grams

8 grams

Paraphenylenediamine

Vac 6 percent 1

Not as good as 1384 –
but about same as Reg

1386 F

Varnish

175 grains

8 grains Hydroazobenzol

Not quite as good as 1384 but better than Reg —

Both 1384 & 6 on 2nd time over make enormous reduction in general surface

1387 E

Van

175 grams —

8 grams of very finely powdered all from 180 mesh

Chloride of Ammonia

Cuts —

Rollers full

halos — dont

fill rough spots

nearly flush with

shiny surface

UG

CTW

1388 E

Var
175 grams
16 grams of Champhor

general surface soft - good
VERY Promising -
Blank - shiny at start with shrunken places - as you go in Var, draws in to globules - This is bad
The surface is apparently better than 1381 but I fear the tannish will not act long

See Book 20 for Continuation of tests

Square Edge Blanks

Date	Conv.	Perfect	Rounds	General Average Conv	General Average Perfect
Oct 14	87.9	85.	20	92.0	80.
16	88.7	77.5	20	91.9	80
17	95.	87.	20	92.	80.2
18	97.5	97.	20	92.2	80.8
19	97.9	92.4	20	92.3	81.1
20	92.7	76.	20	92.4	81.
21	90.4	77.5	20	95.2	83.2
23	98.7	95.4	20	92.5	81.3
24	87.9	67.5	20	92.4	80.9
25	87.9	71.6	20	92.2	78.8
26	89.5	73.3	20	92.2	78.6
27	85.4	67.5	20	92.	78.3

Bevel Edge Blks.

Date	Conv	Perfect	Rounds	General Average Conv	General Average Perfect
Oct 14	98.7	97.5	20	87.4	76.8
16	89.1	84.1	20	87.5	77.1
17	92.4	89.1	20	87.6	77.5
18	97.5	15.	20	88.	78.1
19	95.8	92.1	20	88.2	78.5
20	56.6	50.4	20	87.2	77.6
21	70.	63.7	20	89.7	79.6
23	82.5	77.	20	86.9	77.2
24	77.5	68.7	20	86.6	76.9
25	93.3	90.4	20	86.8	77.3
26	81.	80.8	20	86.8	77.4
27	93.7	90.8	20	87.2	

cont.

Square Edge Specials [illegible]

Date	Conv.	Perfect	Grade	General Average Conv.	General Average Perfect
Sept 13	95.	85. 3	20.	95.	85. 3
14	77. 9	61.	20	91. 4	73. 1
15	88. 8	69. 1	20.	90. 5	71. 8
16	88. 7	54. 1	20	90. 1	67. 3
19	83. 3	60. 4	20	88. 7	65. 9
20	93. 7	83. 3	20	89. 5	68. 8
21	91. 4	86. 4	20	89. 8	71. 3
22	88. 7	74. 1	20	89. 7	71. 7
23	96.	80.	20.	90. 3	72. 6
25	97.	93.	20	91. 05	74. 6
26	95. 4	88. 7	20	91. 4	75. 9
27	89.	86. 6	20	91. 1	76. 8
28	82.	71.	20	90. 3	75. 5
29	94. 5	83. 3	20	90. 8	72. 5
30	91.	72.	20.	90. 8	76. 5
Oct 2	97. 9	94.	20	91. 3	76. 2
3	96. 2	92.	20	91. 5	77. 3
4	97. 5	97. 1	20	92.	78. 1
5	96. 9	96.	19	92. 2	78. 9
6	86. 3	85.	19	92. 1	80.
7	93. 3	83. 3	20.	92. 5	80. 3
9	94. 5	62. 9	20	91. 6	80. 4
10	96. 2	93. 3	20	91. 7	79. 6
11	84. 1	72.	20	91. 9	80. 2
12	90. 8	66. 2	20	91. 9	79. 6
13	99. 1	95. 4	20	92. 2	80. 2

Pearl Edge [illegible]

Date	Conv.	Perfect	Grade	General Average Conv.	General Average Perfect
Sept 13	90. 8	83. 3	20	90. 8	83. 3
14	87.	72. 9	20	88. 9	78. 1
15	75. 4	55. 4	20	84. 4	70. 5
16	86.	64. 5	20	84. 8	69. 0
19	90. 8	82.	20	86.	71. 6
20	99.	91. 6	20	88. 1	74. 9
21	96	91.	20	89. 3	77. 3
22	98. 3	92. 9	20	90 4	77. 7
23	82.	66.	20	89. 4	78. 2
25	79. 4	43. 3	20	87. 5	74. 2
26	93.	90. 4	20	88. 7	75. 7
27	92. 4	87.	20	88. 4	76. 6
28	75	49. 5	20	87. 4	74. 6
29	69. 5	48.	20	86. [illegible]	72. 7
30	87.	70. 4	20	86. 1	72. 5
Oct 2	87. 7	57.	20	86. 3	71. 5
3	97. 9	93. 7	20	87. 2	72. 8
4	97. 9	94.	20	87. 6	74. [illegible]
5	88. 3	77. 1	20	87. 9	74. 3
6	60.	46. 6	20	87.	73. 4
7	85.	83. 3	20	86. 6	73. 9
9	66. 6	53. 3	20	86. 5	74. 3
10	96. 6	95. 8	20	85. 7	73. 4
11	94. 5	93. 4	20	86. 1	74. 3
12	97.	95. 4	20	86. 6	71. 5
13	97. 9	97. 5	20	87.	76.

Report on Blankets Made Daily

Oct.		Oct.	
13	14209	14	20470
14	[illegible]	16	21276
15	14296	17	22202
16 Day	9599	18	22.635
18	[illegible]	19	
19	[illegible]		
20	[illegible]		
21	13445		
22	20403		
23	14897		
25	18262		
26	20423		
27	17342		
28	14509		
29	18523		
30	17.945		
[illegible]	20416		
3	20047		
4	20119		
5	19725		
6	19.536		
7	19403		
9	18966		
10	20.770		
	21.112		
12	20937		
13	20276		

Records to Baldwin

Sept		Oct	
12.	13128	13	16384
13.	11994	14	8894
14.	15045	16	16.372.
15	11831	17.	17.030
16	8075	18	17.025
18	13351	19	16,222.
19	13125	20	14856
20	13131	21	8106
21	14518	23	14224
22.	15153	24	13587
23	7.903.	25	13579
25	15.240	26	15596
26	15714	27	14,934
27	16.078	28	8170
28	16551	30	12171
29	14901	31	15,183
30	9488	Nov	
Oct 2	16330	1	16.214
3	14972.	2	17.609
4	15834		
5	15856		
6	17.136		
7	12.343		
9	17133		
10	17.016		
11	17034		
12	17048		